L 7048-66
ACC NR: AP5027721

$$N_t = \frac{1}{T}\int_0^T \left|\int_{S_t} (fv)\,dS\,dt,\right|$$

where f(S,t) is the dynamic pressure vector, S is an area, and v(St) is the velocity vector. This expression is then shown to be given by two n-dimensional vectors F and V

$$N_t = \frac{1}{T}\int_0^T \left[\sum_{k=1}^{n} F_k(t)\,V_k(t)\right]dt = \sum_{k=1}^{n}\frac{1}{T}\int_0^T F_k(t)\,V_k(t)\,dt,$$

$$F = (F_1, F_2, \ldots, F_n), \quad V = (V_1, V_2, \ldots, V_n).$$

Under the assumption that the oscillations are sinusoidal, F and V are related by F = ZV where Z is a square matrix of n-th order signifying the input impedance of the system. With the aid of the above formulae and various instruments such as strain gages, accelerometers, integrators, and amplifiers, this energy flow is measured on various machinery. Orig. art. has: 7 equations and 2 figures.

SUB CODE: ME/ SUBM DATE: 27Apr65/ ORIG REF: 010/ OTH REF: 003

BC

Card 2/2

SIDORIN, I.I., zasluzhennyy deyatel' nauki i tekhniki, doktor tekhn.nauk, prof.; GENKIN, M.D., kand.tekhn.nauk; KUZNOV, N.M., inzh.

Residual stresses in the surface layer of gear-wheel teeth and their effect on the durability of gears. Vest.mashinostr. 45 no.2:64-67 F '65. (MIRA 18:4)

PETRUSEVICH, A.I., doktor tekhn. nauk, prof.; GENKIN, M.D., kand. tekhn. nauk; RYZHOV, N.M., inzh.

Effect of burns caused by grinding on the contact strength of cemented and hardened gear wheels. Vest. mashinostr. 45 no.6: 7-13 Je '65. (MIRA 18:6)

GENKIN, M.L.

USSR/General Problems of Pathology.- Tumors. Comparative Oncology. Tumors of Man U

Abs Jour : Ref Zhur Biol., No 6, 1959, 27557

Author : Genkin, M.L.
Inst :
Title : On the Problem of Primary Sarcoma of the Stomach.

Orig Pub : Sov. meditsina, 1958, No 7, 135

Abstract : A 43-year-old patient had in the course of 5 months pains in the left side of the abdomen, nausea, general feeling of weakness, tiredness, increasing emasciation, loss of appetite. In the epigastric region, to the left and down, there was an immovable, painless tumor. the total gastric acidity was 28, there was no free HCl, combined HCl and lactic acid were not present. In laparotomy, a large tumor was discovered which originated from the middle third of the posterior wall and large curvature, histological investigation of which showed

Card 1/2

GENKIN, M.L.

Two cases of cancer of the small intestine. Khirurgiia 34 no.9: 122-123 S '58. (MIRA 12:4)

1. Iz khirurgicheskogo otdeleniya (zav. M.L. Genkin) Ul'yanovskoy oblastnoy bol'nitsy (glavny vrach - zasluzhenny vrach RSFSR A.P. Ivanov).

(INTESTINES--CANCER)

GENKIN, M.L.

Immediate outcome of surgical therapy in gastric and duodenal ulcer according to data from the Ulyanovsk Province Hospital. Sov.med. 23 no.8:22-25 Ag '59. (MIRA 12:12)

1. Iz khirurgicheskogo otdeleniya (zav. M.G. Genkin) Ul'yanovskoy oblastnoy bol'nitsy (glavnyy vrach - zasluzhennyy vrach RSFSR A.P. Ivanov).
(PEPTIC ULCER surgery)

GENKIN, M.L. (Ulyanovsk, ploshch. III Internatsionala, d.14, kv.73)

Results of the surgical treatment of peptic ulcer of the stomach and duodenum. Vest.khir. no.9:29-32 '61. (MIRA 15:3)

1. Iz khirurgicheskogo otdeleniya (zav. - M.L. Genkin) Ulyanovskoy oblastnoy bol'nitsy.
(PEPTIC ULCER) (STOMACH--SURGERY) (DUODENUM--SURGERY)

GENKIN, M.L.; TENYAYEVA, I.A.

Analysis of postoperative fatalaties in acute abdomen syndrome during the period of 1950-1959 in the Ul'yanovsk Province. Sov. Med. 26 no.9:143-146 S '62. (MIRA 17:4)

1. Iz khirurgicheskogo otdeleniya (zav. M.L. Genkin) Ul'-yanovskoy oblastnoy bol'nitsy (glavnyy vrach N.A. Yevstigneyev).

GUREVICH, P.S.; GENKIN, M.L.; ZEMSKOV, N.K.

Eosinophilic granuloma of the stomach. Kaz. med. zhur. no.3: 77-78 My-Je'63. (MIRA 16:9)

1. Ul'yanovskaya oblastnaya bol'nitsa (glavnyy vrach - A.P. Ivanov)

(EOSINOPHILIC GRANULOMA) (STOMACH—TUMORS)

YEVDOKIMOV, P.P.; GENKIN, M.L. (Ul'yanovsk)

History of the surgical service of the Ulyanovsk Province Hospital. Khirurgiia 39 no.5:143-147 My '63.
(MIRA 17:1)

GENKIN, M.R.

Parts for repairing equipment should be manufactured by machine-tool plants. Mashinostroitel' no.6:7 Je '60. (MIRA 13:8)
(Machine tools—Maintenance and repair)

GENKIN, N.B.; CHERECHUKIN, N.M. (Moskva)

Waterspouts on Issyl-Kul. Priroda 49 no.5:104 My '60.
(MIRA 13:5)

(Issyk-Kul--Waterspouts)

GENKIN, N.D.; VRBIK,J. [translator]

Methods of purification and treatment of waste waters from the organic chemistry industry. Chem prum 13 no.11:561-565 N'63.

1. Vyzkumny ustav meziproduktu a barviv, Moskva (for Genkin).

L 24720-66 EWT(m)/EWP(j) IJP(c) RM

ACC NR: AP6009511 SOURCE CODE: UR/0413/66/000/005/0020/0021

AUTHOR: Ivanova, V. A.; Genkin, N. D.; Vorob'yev, V. D. Ginzburg, B.G.; Zharavin, K. N.; Korchilava, Ye. Ya.; Savost'yanova, N. G.

ORG: none

23
B

TITLE: Preparation of Captax-2-mercaptobenzothiazole. Class 12, No. 179306 [announced by the Scientific Research Institute of Organic Semifinished Products and Dyes and the Berezniki Plant of Aniline Dyes (Nauchno-issledovatel'skiy institut organicheskikh poluproductov i krasiteley i Bereznikovskiy anilinokrasochnyy zavod)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5, 1966, 20-21

TOPIC TAGS: captax, mercaptobenzothiazole, aniline, aniline dye

ABSTRACT: An Author Certificate has been issued describing a method for preparing Captax-2-mercaptobenzothiazole by melting aniline, sulfur, nitrobenzene, carbon bisulfide at elevated temperatures and pressure, followed by dissolving the melt in a water solution of alkali hydroxide or milk of lime, purifying the solution obtained and separating the product. To improve the quality of Captax, decontaminate the waste water and make it possible to use the solution

2,

Card 1/2 UDC: 547.789.6'2.07

L 24720-66

ACC NR: AP6009511 O

of the alkali Captax melt for the production of sulfuramides, the purification is conducted by extraction with benzene polychlorides, chlorobenzene, benzene, or their water emulsions, followed by removal of the residue of the solvent by conventional methods. [LD]

SUB CODE: 11/ SUBM DATE: 08Aug64/

Card 2/2 FV

GERSHON, N. M.

14

Effect of Stress on the Hall Effect in Permalloy. N. M. Gershin (*Zhur. Eksper. Teoret. Fiz.*, 1947, 17, 1080–1083; *C. Abs.*, 1950, 44, 3466).—[In Russian]. Annealed samples of an alloy containing nickel 78, iron 15·5, molybdenum 2·5, and cobalt 3·2% showed a normal Hall effect, with no asymmetry of the Hall constant R. Under plastic deformation (σ = 8·5, 12·5, and 18 kg./mm.^{2}) R increases, at const. magnetization $4\pi I$, proportionally to the stress σ. The effect of elastic deformations (σ = 1 kg./mm.^{2}) is due only to one effect on $4\pi I$, as R is independent of the magnitude of the deformation.

GENKIN, N. M.

PA 169T97

USSR/Physics - Hall Effect
Magnetism

Oct 50

"Investigating the Hall-Kikoin Effect of Dynamic Steel in Strong Fields," N. M. Genkin, Yaroslav Pedagogical Inst

"Zhur Eksper i Teoret Fiz" Vol XX, No 10, pp 941-943

Qualitative investigation of subject effect shows: (a) In fields less than technical saturation there exists hysteresis of the Hall-Kikoin effect. (b) In the region of technical saturation the Hall-Kikoin emf does

[redacted] 169T97

USSR/Physics - Hall Effect (Contd)

Oct 50

not decrease with the field. (c) In the region of paraprocess the Hall-Kikoin emg increases linearly with the field. Submitted 20 Mar 50.

[redacted] 169T97

1. GE'KIN, N. M.; [illegible]

2. USSR (600)

4. Hall Effect

7. Hall-Kikoin effect as an indicator of the structure of high-speed steel. Zhur. eksp. i teor. fiz. 23 no. 4 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

GENKIN, N.M.

USSR/Physics - Thermomagnetic effect FD-1365

Card 1/1 : Pub. 146-10/18

Author : Genkin, N. M., and Priporova, G. P.

Title : Investigation of the transverse thermomagenetic effect

Periodical : Zhur. eksp. i teor. fiz., 26, 323-326, Mar 1954

Abstract : The authors investigate qualitatively the transverse thermomagnetic effect of low-carbon steel. They show that the transverse thermomagnetic effect is proportional to magnetization. In the region of fields with technical saturation the transverse thermomagnetic effect does not vary with the field. In lesser fields there exist hystereses of the transverse thermomagnetic effect.

Institution : Yaroslovl Pedagogic Institute

Submitted : July 14, 1953

GENKIN, N. M.

18 18 4E2C-5

Low-temperature sulfiding of cast iron parts. V. N. Lunadin, N. M. Genkin, and Yu. Ya. Pashin (Automobile Plant, Yaroslavl'). *Avtomobil. i Traktor. Prom.* 1937, No. 4, 39-41.—Samples were sulfided at 90–8° for 3 hrs. at 10–12 v. in baths contg., Na_2S 15, Na_2S 15-H_3PO_4 15, and KSCN 12-Na_2SO_3 7.5 g./l. all of them requiring frequent replenishment. Abrasion testing of untreated parts and those sulfided in the above solns. gave, resp., 4.15, 3.3, 1.94, and 0.6% g. loss. Analysis of turnings showed 7–10% S in the first 0.05-mm. layer, dropping to 0.3% S 0.1 mm. deep, though penetrating as deep as 0.4 mm. Diagm. increase as a function of c.d. in sulfiding is given. J. D. Gri

BERG, P.P.; VOROTYNTSEV, M.F.; GAMKIN, N.M.; PAVLOV, Yu.N.; PETROVA, G.B

Increasing the wear resistance of heavy duty dies. Lit. proizv. no.1:39-40 Ja '65. (MIRA 18:3)

TATUR,Ye.A., inzhener; GENKIN,N.S., inzhener; LEBEDEV,A.P., inzhener

The new MP-10 marine steam engine and results of its tests.
Rech. transp. 14 no.6:19-24 Je '55. (MLRA 8:9)
(Marine engines)

LEBEDEV, Aleksey Pavlovich; GENKIN, Naum Solomonovich; TATUR, Yevgeniy Aleksandrovich; IKONNIKOV, S.A., retsenzent; SHIMKO, K.N., red.; SHERMNIKOVA, Z.V., red.izdatel'stva; KRASNAYA, A.K., tekhn.red.

[MP-10 marine steam engine] Sudovaia parovaia mashina MP-10. Moskva, Izd-vo "Rechnoi transport," 1957. 179 p. (MIRA 10:12)
(Marine engines)

VASIL'YEV, Nikolay Aleksandrovich; GENKIN, Pavel Borisovich; SHCHERBATYKH, Maksim Alekseyevich; FEFERMAN, A.Ye., red.

[Sheepshearing and the classification of wool] Strizhka ovets i klassirovka shersti. Moskva, Rossel'khozizdat, 1965. 241 p. (MIRA 18:8)

[redacted], R. L.; LEVIN, Ya. F.

Clinical Considerations, Classification and Treatment of Frostbite.

Sovetskaya Meditsina, 1943, 11-12, 12-15

GENKIN, S.I., uchitel'

Growing plants in winter for study purposes. Biol. v shkole no.1:91-92 Ja-F '59. (MIRA 12:2)

1. Shkola rabochey molodeshi No.22, Leningrad.
(Botany--Study and teaching)

BARKAN, V.M., inzh.; AYZENSHTAT, S.Yu., inzh.; GENKIN, S.I., inzh.

Concealed replaceable 1-464A-series industrial wiring for dwellings with heavy paneling. Prom. energ. 17 no.3:39-42 Mr '62. (MIRA 15:2)

(Electric wiring, Interior)

L 10410-63 EWP(r)/EWT(l)/EWA(g)/EWT(m)/FS(b)/BDS/ES(v)--AFFTC/AEDC/SSD--
Py-4/Pe-4

PHASE I BOOK EXPLOITATION SOV/6386 69 65

Genkin, Semen Isaakovich, Candidate of Technical Sciences, and Natal'ya Dmitriyevna Lebedyanskaya, Candidate of Technical Sciences

Germetizatsiya sovremennykh samoletov (Hermetic Sealing of Modern Airplanes) Moscow, Voyenizdat, 1962. 108 p. 8000 copies printed.

Ed.: D. A. Novak; Tech. Ed.: N. A. Yakovleva.

PURPOSE: This manual is intended for technical, engineering, and flight personnel in the Air Force, Civil Air Fleet, and DOSAAF. It may also be used by students in schools of aviation technology.

COVERAGE: This book describes the methods and materials used in hermetic sealing of modern airplanes: airtight sectional and single-unit joints, airtight cockpits, and integral structural sections used for fuel supply. There are 23 references, all Soviet, including 4 translations.

Card 1/3

GENKIN, S.L.

Theory and practice in teaching botany. Zst.v shkole no.1:35-38 Ja-F '56. (MLRA 9:5)

1. Uchitel' shkoly rabochey molodezhi No. 22 goroda Leningrada.
(Botany--Study and teaching)

ABRAMTSEV, Ye.P.; KOZLOVSKIY P.R.; GEYKIN, S.R.

Automatic control of conveyer lines. Bezop.truda v prom. 3 no.8: 22-25 Ag '59. (MIRA 12:11)
(Mine haulage) (Automatic control)

GENKIN, S.R., inzh.; SARAYEV, S.P., inzh.; TRUNOV, V.B., inzh.

Results of inspecting electric mine equipment. Bezop.truda v prom. 9 no.4:7-9 Ap '65. (MIRA 18:5)

GENKIN, V., starshiy leytenant

Mountable-dismountable signposts. Voen.-inzh.zhur. 96 no.9:37 S '52. (MIRA 12:3)
(Signs and signboards)

NOSENKOV, M., inzh.; GOLOVICHER, M., inzh.; MOISEYEVICH, Ye., inzh.; CHIBRIKOV, V., inzh.; GENKIN, V., inzh.

Balancing driving wheels. Avt. transp. 43 no.10:41-42 O '65. (MIRA 18:10)

BALELOS, B.I., inzh.; GENKIN, V.A., inzh.

Determining the zones of faults of a hanging side in working ore shoots in the Krivoy Rog Basin. Gor. zhur. no.12:25-27 D '62. (MIRA 15:11)

1. Krivorozhskiy opornyy punkt Vsesoyuznogo nauchno-issledlvatel'skogo marksheyderskogo instituta.
(Krivoy Rog Basin--Faults (Geology))
(Mine surveying)

L 21173-66 EWP(e)/EWT(m)/EWA(d)/T/EWP(t)/ETC(m)-6 IJP(c) MJW/JD/WW/JG/DJ/WH
ACC NR: AP6009609 (A) SOURCE CODE: UR/0369/66/002/001/0072/0077

AUTHOR: Preygerzon, Sh. I.; Kovnatskiy, V. S.; Genkin, V. A.

ORG: Belorussian Polytechnic Institute, Minsk (Belorusskiy politekhnicheskiy institut)

TITLE: Iron-containing cermet antifriction materials

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 1, 1966, 72-77

TOPIC TAGS: cermet, bearing, antifriction material, lubrication

ABSTRACT: The authors found that iron-containing cermets have high wear resistance and can function at higher loads than bronze; their running-in properties are poorer than those of bronze, however. This may be explained by the fact that the plasticity of cermets is lower than that of bronze. At sliding speeds of 2.5—3 m/sec and with abundant lubrication, the load-carrying capacity of cermet bearings is equal to that of bronze bearings; at lower speeds cermet bearings perform better. Under light loads and low speeds cermet bearings can function without additional lubrication; this is a substantial advantage over nonporous bearings. Addition of copper to the cermet lowers the load capacity of the bearing, but improves its wear resistance. Increasing the graphite content of the cermet above 2% impairs its antifriction properties. Of the materials tested, cermet ZhG-2 (98%Fe + 2%C) exhibited the best antifriction characteristics. Orig. art. has: 2 figures and 1 table. [VS]

SUB CODE: 11/ SUBM DATE: 15Oct64/ ATD PRESS: 4222

Card 1/1

L 17913-63 EWT(d)/FCC(w)/BDS ASD/ESD-3/APGC/IJP(C) Pg-4/Pk-4/Po-4/
Pq-4 GG

ACCESSION NR: AP3005679 S/0146/63/006/004/0063/0070

AUTHOR: Balashov, Ye. P.; Genkin, V. L.; Sorokin, M. S. 76 75

TITLE: Magnetic internal storage of high reliability 16

SOURCE: IVUZ. Priborostroyeniye, v. 6, no. 4, 1963, 63-70

TOPIC TAGS: storage, memory, internal storage

ABSTRACT: A diode-digit-access internal storage of rectangular-hysteresis-loop ferrite-core type is described. The recording and readout of information are carried out by full currents which substantially reduces the stability requirement of the current source and increases the reliability of the storage. A storage block diagram is presented and discussed. Experiments were carried out with a 32-address, 30-digit storage. P13A and P201A transistors and VT-5 ferrites were used. The storage is eventually intended for a "special-purpose digital computer." Orig. art. has: 4 figures.

ASSN: Leningrad Electrotechnical Institute.

Card 1/2

BALASHOV, Ye.P.; GENKIN, V.L.

Some principles of the plotting of storage units with ferrite cores and total-flux recording. Izv. vys. ucheb. zav.; prib. 6 no.5:20-26 '63. (MIRA 16:11)

1. Leningradskiy elektrotekhnicheskiy institut imeni V.I. Ul'yanova (Lenina). Rekomendovana kafedroy schetno-reshayushchey tekhniki.

L 56504-65 EWT(d)/ERD-2/EWP(1) Pq-4/Pg-4/Pk-4 IJP(c) BB/GG

ACCESSION NR: AP5016757 UR/0286/65/000/010/0081/0081
681.142.621

37
B

AUTHOR: Smirnov, V. B.; Balashov, Ye. P.; Genkin, V. L.; Smolov, V. B.

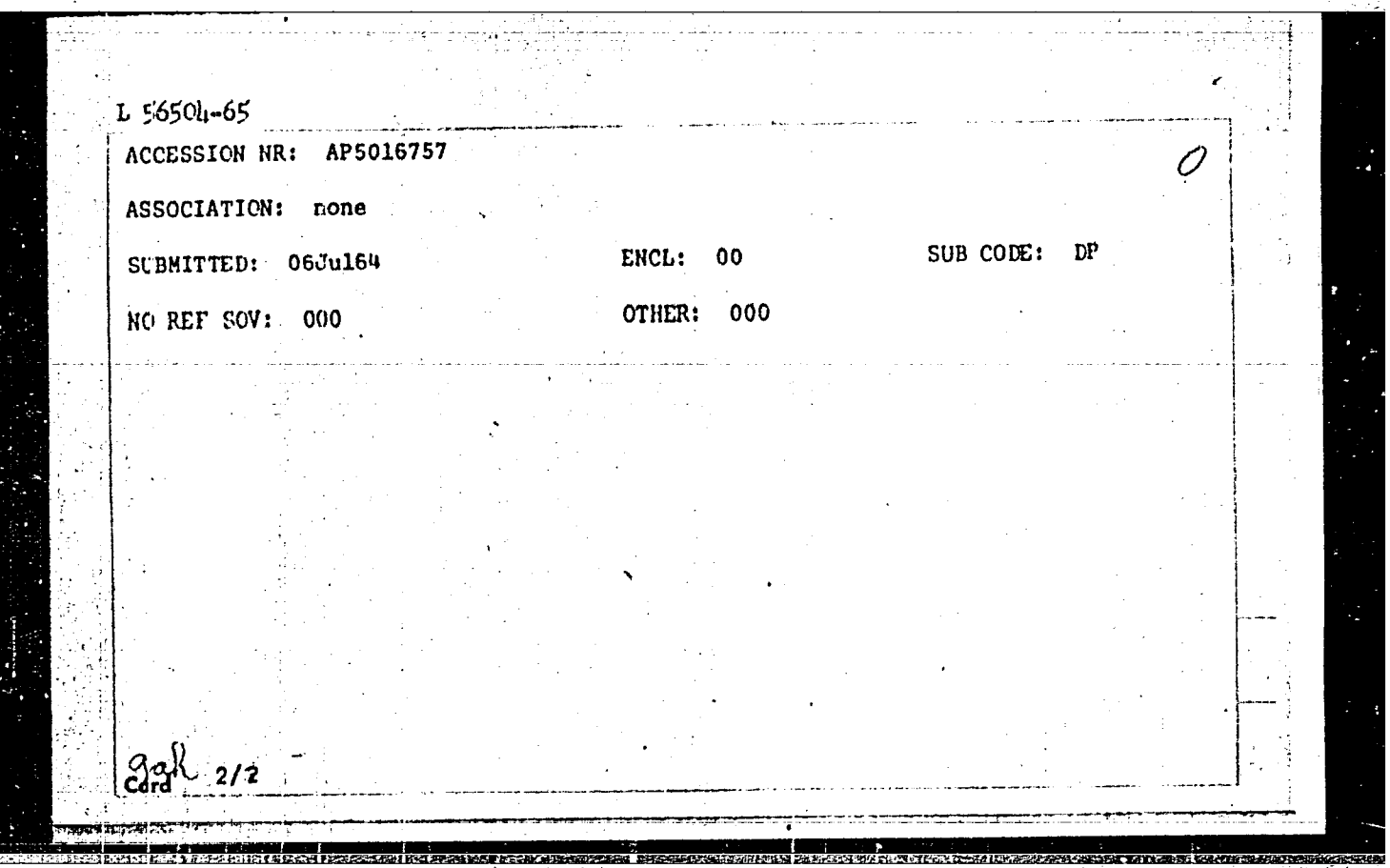
TITLE: A device for converting binary code to Grey code. Class 42, No. 171158

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 10, 1965, 81

TOPIC TAGS: code converter, 16U binary code, computer component

ABSTRACT: This Author's Certificate introduces a device for converting binary code to Grey code. The unit contains a register for binary code reception. The device is made with pulse transformers to reduce the amount of equipment required and to improve reliability. The start of one output winding in the transformer for the i-th digit is connected to the start of the output winding in the transformer for the $(i-1)$-th digit. The end of the second output winding in the transformer for the i-th digit is connected to the end of the output winding for the $(i-1)$-th digit. The end and start of the first and second windings for the i-th digit are connected respectively through diodes to the output busses for the converted code.

Card 1/2



L 56504-65

ACCESSION NR: AP5016757

ASSOCIATION: none

SUBMITTED: 06Jul64 ENCL: 00 SUB CODE: DP

NO REF SOV: 000 OTHER: 000

Card 2/2

L 61626-65 EWT(d)/EED-2/EWP(1) Pq-4/Pg-4/Pk-4 IJP(c) BB/GG/GS

ACCESSION NR: AT5014716 UR/0000/65/000/000/0099/0108

AUTHOR: Balashov, Ye. P.; Genkin, V. L.

TITLE: Some versions of highly reliable magnetic storage elements

SOURCE: Operativnyye i postoyannyye zapominayushchiye ustroystva (Rapid and non-volatile storage); sbornik statey. Leningrad, Izd-vo Energiya, 1965, 99-108

TOPIC TAGS: magnetic memory reliability, full current core switching

ABSTRACT: The authors studied the reliability of some new memory units with separate subelements for storage and sampling (full current switching). They utilized three coefficients: those of allowance $K_1 = (I_{sw})_{min}/(I_o)_{max}$, perturbation stability $k_2 = I_{th}/(I_{pert})_{max}$, and discrimination capability $k_o = (I_{sw})_{min}/(I_{pert})_{max}$, for the study of storage devices with diode samplers, choke-type samplers, and controlled transformers. (I_o = current, securing the core switching along the limiting dynamic hysteresis loop in a given time; I_{th} = threshold field of the storing core; I_{sw} and I_{pert} = magnitudes of the switching operating and perturbing current within the magnetic storing device.) The results are summarized in Table 1 of the Enclosure. Orig. art. has: 16 formulas, 5 figures, and 1 table.

Card 1/3

L 61626-65

ACCESSION NR: AT5014716

ASSOCIATION: none

SUBMITTED: 20Jan65 ENCL: 01 SUB CODE: DP

NO REF SOV: 005 OTHER: 000

Card 2/3

L 61626-65

ACCESSION NR: AT5014716 ENCLOSURE: 01

TABLE 1.

Storage unit type;	A_1	A_2	A_3
	$\sqrt{2a}$	$\sqrt{2a}$	2
Matrix;	$\sqrt{3a}$	$\sqrt{3a}$	3
With linear sampling;			
Full current;	3	10	10
with diode sampler;	3	5	5
with choke coil sampler;	5	50	50
with control class transformer;			

Card 3/3

L 18456-66 EWT(d)/EWP(1) IJP(c) BB/GG
ACC NR: AP6006380 SOURCE CODE: UR/0413/66/000/002/0114/0114

INVENTOR: Genkin, V. L.; Smirnov, V. B.

ORG: none

TITLE: A mod 2 adder based on a fluxer. Class 42, No. 178165

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 114

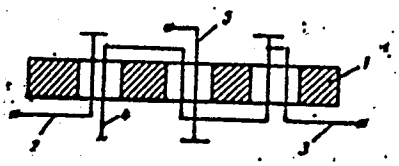
TOPIC TAGS: computer component, adder, fluxer, computer circuit

ABSTRACT: This Author's Certificate introduces a mod 2 adder based on a fluxer with two input windings, one output winding and a reset winding. Provision is made for both simultaneous and nonsimultaneous arrival of the input signals by passing the input windings through the end openings while the output winding encloses the two inside cross pieces.

Card 1/2 UDC: 681.142.07

L 18456-66

ACC NR: AP6006380



1 - fluxer; 2 and 3 - input windings; 4 - output winding; 5 - reset winding.

SUB CODE: 09/ SUBM DATE: 27Jul64

Card 2/2 mg 5

ACC NR: AP6013304 EWT(d)/EWP(1) IJP(c) BB/GG

SOURCE CODE: UR/0413/66/000/008/0098/0098

AUTHORS: Balashov, Ye. P.; Genkin, V. L.

ORG: none

TITLE: An operational storage device. 166 Class 42, No. 180856

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 98

TOPIC TAGS: ferrite core memory, computer memory, computer storage device

ABSTRACT: This Author Certificate presents an operational storage device made up of storage cells. Each of these memory cells contains two ferrite cores with a rectangular hysteresis loop. One of these cores is a storage core and the other is a gating core. These cores are connected by a coupling loop (see Fig. 1). The design increases the reliability and reduces the requirements for control equipment of the device. Reading tie lines are connected to all storage cores and gating cores of each quantity. A compensation tie line passes through all the storage cores of each quantity. A recording tie line passes through all the gating cores of each quantity. A recording discharge tie line passes through the gating cores of one discharge of all quantities.

Card 1/2

UDC: 681.142

Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 18Jul 62

Card 2/2 LC

ACC NR: AR7004320 SOURCE CODE: UR/0271/66/000/011/B024/B024

AUTHOR: Balashov, Ye. P.; Genkin, V. L.; Smolov, V. B.; Chernyavskiy, Ye. A.

TITLE: Efficiency and reliability of magnetic internal storages

SOURCE: Ref. zh. Avtomat. telemekh. i vychisl. tekhn., Abs. 11B189

REF SOURCE: Izv. Leningr. elektrotekhn. in-ta, ch. 2, vyp. 56, 1966, 117-120

TOPIC TAGS: digital computer, computer reliability, computer storage device, computer design, reliability engineering

ABSTRACT: Criteria for evaluating magnetic internal storages of digital computers are defined. Informational efficiency is a product of storage capacity and access rate. Design efficiency is determined by the size, weight, and power consumption per unit efficiency of informational capacity. Information reliability is a ratio of maximum noise to minimum desirable signal in destroyed-information readout. Design reliability is a product of initial operable-condition probability and a probability of operable condition over the work period. The above criteria determine the technical oprability of storages from various aspects. Bibliography of 2 titles.Ye. P.
[Translation of abstract]

SUB CODE: 09, 14

Card 1/1 UDC: 681.142.652.2

GENKIN, V.M.; LEBEDEV, A.V.; SHCHERBAKOV, V.N.

Cooling of a sharp-focused X-ray tube with ungrounded anode. Zav. lab. 30 no.10:1285 '64. (MIRA 18:4)

1. Gor'kovskiy issledovatel'skiy fiziko-tekhnicheskiy institut.

GENKIN, V.N.

USSR/Physics - X-Ray Scattering 1 Apr 53

"Scattering of X-Rays by Metals in the Region of Very Small Angles," B.M. Rovinskiy and V.M. Genkin, Inst of Mach Bldg, Acad Sci USSR.

DAN SSSR, Vol 89, No 4, pp 673-675

Obtained radiograms and curves of intensity distribution in case of very small angles showed that pure metals, whether stressed cast, recrystallized, or sintered, follow the pattern of "gaseous scattering." Author explains phenomenon by difference of electron density in defects. Presented by Acad G.S. Landsberg 7 Feb 53.

256T118

Genkin, V. M.

FD-622

USSR/Physics - X-Rays

Card 1/1 : Pub. 146-12/18

Author : Genkin, V. M.

Periodical : Zhur. eksp. i teor. fiz. 26, No 2, 224-227, February 1954

Abstract : Derives a formula by means of which it is possible to determine the sizes and number of submicroscopic objects in a substance using a photometric curve of straight and scattered X-rays.

Institution :

Submitted : December 25, 1952

GENKIN, V. M.

25(6) PHASE I BOOK EXPLOITATION SOV/2555

Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti. Ukrainskoye respublikanskoye pravleniye

Novyye metody kontrolya i defektoskopii v mashinostroyenii i priborostroyenii (doklady Respublikanskoy konferentsii) (New Methods of Inspection and Flaw Detection in the Machinery and Instrument-manufacturing Industries (Reports of the Conference Held at Kiyev, 1956)) Kiyev, Gostekhizdat USSR, 1958. 264 p. 4,700 copies printed.

Sponsoring Agency: Akademiya nauk USSR.

Ed.: A. Amelin; Tech. Ed.: P. Patsalyuk; Editorial Board: I.I. Greben', B.D. Grozin, A.Z. Zhmudskiy, G.N. Savin (Resp. Ed.), I.D. Faynerman (Dep. Resp. Ed.), and A.A. Shishlovskiy.

PURPOSE: This book is intended for engineers, scientific workers, and technicians dealing with problems of inspection and flaw detection.

COVERAGE: This is a collection of scientific papers presented at a conference sponsored by the Academy of Sciences, UkrSSR, and the Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti, Ukrainskoye pravleniye (Ukrainian Branch, Scientific and Technical Society of the Instrument-manufacturing Industry). The papers deal with modern methods of inspection and flaw detection used in the machinery- and instrument-manufacturing industries. The subjects discussed include the use of electron microscopes in the investigation of metal surfaces; X-ray, gamma-ray, luminescense, magnetic, and ultrasonic methods of flaw detection; use of radioactive isotopes; X-ray diffraction methods of metal analysis; and the use of interferometers for measuring length and thickness and determining the coefficient of linear thermal expansion. No personalities are mentioned. References follow several of the papers.

Card 4/9

18 (7)

SOV/48-23-5-31/31

AUTHOR: Genkin, V. M.

TITLE: On the Fundaments of the Method of Roentgenographic and Gamma-graphic Detection of Defects (K osnovam metodiki rentgeno-graficheskoy i gammagraficheskoy defektoskopii)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, ', Nr 5, pp 666 - 668 (USSR)

ABSTRACT: In the introduction to the present paper the author enumerates the demands made on such a detector of defects. The hardness of rays, sensitivity of interpretation and computation of the thickness of defects in the direction of transillumination are the most important elements of such apparatus. Determination and magnitude of defects are dealt with in the second part of this paper. Formulas are derived for the exposure conditions as well as for the time of exposure. A relationship is derived between time of exposure and material thickness and the respective photometrical curve is shown in a diagram (Fig 1). The relationship between material thickness and voltage of the X-ray tube is likewise investigated and a diagram is given (Fig 2). The final part deals with some problems of roentgenographic transillumination. The difficulties occurring in welded joints

Card 1/2

On the Fundaments of the Method of Roentgenographic and Gammagraphic Detection of Defects

SOV/48-23-5-31/31

with respect to direction and time of exposure are dealt with here, and some important relations for the determination of the magnitude of defects are also given. There are 3 figures.

ASSOCIATION: Zavod "Krasnoye Sormovo ("Krasnoye Sormovo" Plant)

Card 2/2
USCOMM-DC-61198

ACC NR: AP7001216 SOURCE CODE: UR/0141/66/009/006/1142/1145

AUTHOR: Genkin, V. M. -- Genkin, V. N.

ORG: Scientific Research Institute of Radiophysics, Gor'kiy University (Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Molecular radiation in a high-density resonance medium

SOURCE: IVUZ. Radiofizika, v. 9, no. 6, 1966, 1142-1145

TOPIC TAGS: molecular radiation, molecule, critical wavelength, radiation, resonance

ABSTRACT: A study has been made of the relaxation of a two-level molecule in a high-density resonance medium for the case when the dimensions of the system exceed the wavelength. The effects of delay are neglected. The authors' thank V. M. Fayn for his attention and help in preparing the article. Orig. art. has: 17 formulas. [Based on author's abstract] [NT]

SUB CODE: 20/SUBM DATE: 30Nov65/ORIG REF: 006/OTH REF: 004/

UDC: 530.145:539.2.011

Card 1/1

ACC NR: AP7005871 SOURCE CODE: UR/0051/66/000/012/3662/3663

AUTHOR: Genkin, V. M.; Genkin, G. M.; Fayn, V. M.

ORG: Gor'kiy State University im. N. I. Lobachevskiy (Gor'kovskiy gosudarstvennyy universitet)

TITLE: Contribution to the theory of nonlinear properties of ferromagnets

SOURCE: Fizika tverdogo tela, v. 8, no. 12, 1966, 3662-3663

TOPIC TAGS: ferromagnetic material, nonlinear effect, adiabatic approximation, ferromagnetic resonance, magnetic susceptibility, spin orbit coupling

ABSTRACT: The authors consider a different type of nonlinear effects of ferromagnets, which can be described by expanding the polarization and the magnetization in powers of the products of the electric and magnetic fields. This is called nonlinearity of the mixed type, to distinguish it from the nonlinearities of the electric and magnetic type which have been discussed in the literature before. The analysis is carried out in the adiabatic approximation under the assumption that the frequency of the ferromagnetic resonance and the frequencies of the external fields are much lower than the characteristic frequency of the lectron motion. This makes it possible to determine the Hamiltonian of the crystal as a function of the external electric and magnetic fields, and to use the coefficients of this Hamiltonian to determine the spin orbit interaction. This in turn makes it possible to determine the coefficients in the expansions for the polarization and for the magnetization. The elements of the sus-

Card 1/2

ACC NR: AP7005871

ceptibility tensor, which enters in these expressions, are estimated. Orig. art. has: 3 formulas.

SUB CODE: 20/ SUBM DATE: 21Jun66/ ORIG REF: 003/ OTH REF: 002

Card 2/2

26704
S/056/61/041/005/019/038
B102/B108

24.7900

AUTHORS: Genkin, V. M., Fayn, V. M.

TITLE: The width of antiferromagnetic resonance lines

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 5(11), 1961, 1522-1526

TEXT: The authors developed a method to estimate the antiferromagnetic resonance line widths or the corresponding relaxation times due to the interaction between the homogeneous magnetization precession and the spin waves. A. I. Akhiyezer et al. (ZhETF, 36, 216, 1959; UFN, 72, 3, 1960) have studied this interaction in ferromagnetics, for which the line width was found to be very small since exchange interaction does not affect the homogeneous precession. In the case of antiferromagnetics this interaction is most effective and the lines become wider. The Hamiltonian of the spin system is

$$\mathcal{H} = 2J \sum_{(lm)} \mathbf{S}_l \mathbf{S}_m + g\beta H_A \left(\sum_l S_l^z - \sum_m S_m^z \right) \qquad (1),$$

Card 1/7

The width of antiferromagnetic ...

with $\underline{S}_1$ and $\underline{S}_{11}$ being the spin operators of the first and the second sublattice, $\langle lm \rangle$ indicates summation over the nearest neighbors, the exchange integral $J>0$ and H_A is the effective field of anisotropy.

Introducing the operators of spin deviation and neglecting terms of an order higher than the third,

$$S_l^+ = (2S)^{1/2}(1 - a_l^* a_l/4S)\, a_l, \quad S_l^- = (2S)^{1/2} a_l^* (1 - a_l^* a_l/4S). \qquad (2)$$
$$S_l^z = S - a_l^* a_l, \quad S_m^+ = (2S)^{1/2} b_m^* (1 - b_m^* b_m/4S),$$
$$S_m^- = (2S)^{1/2}(1 - b_m^* b_m/4S)\, b_m, \quad S_m^z = -S + b_m^* b_m, \quad S_{lm}^{\pm} = S_{lm}^x \pm iS_{lm}^y$$

is found. With these operators, the Hamiltonian (1) may be separated into sums of second-order and fourth-order terms of a and b. The second-order terms are diagonalized and represent the unperturbed spin-wave Hamiltonian. The fourth-order terms represent the spin-wave interaction energy

$$\mathcal{H}' = -2J \sum_{\langle lm \rangle} \left\{ \tfrac{1}{4} (a_l^* a_l a_l b_m + a_l b_m^* b_m b_m + b_m a_l^* a_l^* a_l + b_m^* b_m^* b_m a_l^*) + a_l^* a_l b_m^* b_m \right\}. \quad \text{The}$$

Card 2/7

The width of antiferromagnetic ...

operators a and b are given in Fourier representation and with $a_k = \alpha_k \operatorname{ch}\Theta_k - \beta_k^* \operatorname{sh}\Theta_k$, $b_k = -\alpha_k^* \operatorname{sh}\Theta_k + \beta_k \operatorname{ch}\Theta_k$. $\operatorname{th} 2\Theta_k = \gamma_k/D$; $D = 1 + g\beta H_A/zJS$, where $2z$ is the number of the nearest spins. The interaction Hamiltonian can be represented as

$$\mathcal{H}' = \frac{Jz}{N} \sum_{1,2,3,4} \{\Phi_{1(23)4}\alpha_1\alpha_2^*\alpha_3^*\alpha_4 + \Psi_{1(234)}\beta_1\beta_2^*\beta_3^*\beta_4 + \lambda_{1234}\alpha_1^*\alpha_2\beta_3^*\beta_4 - \\ - \Phi_{1234}\alpha_1^*\alpha_2\alpha_3\beta_4^* - \Psi_{1234}\beta_1^*\beta_2\beta_3\alpha_4\} \Delta(k_1 - k_2 - k_3 + k_4). \quad (4)$$

from which the terms of the type $\alpha_1\alpha_2\beta_3\beta_4$ are eliminated. The Hamiltonian (4) describes the spin-wave interaction processes. The operators α_o and α_o^* are used to investigate the relaxation of the uniform precession of the magnetization. It is assumed that the spin waves are in thermodynamical equilibrium at the temperature T. The probability of processes in which the number of spin waves is changed is determined. For low temperatures ($kT < \varepsilon_o$), the main contribution to the line width is due to processes of

Card 3/7

The width of antiferromagnetic ...

the type

$$W(n_1, n_2, n_3, n_4 \to n_1+1, n_2-1, n_3+1, n_4-1) = \frac{2\pi}{\hbar}\frac{e_{06}^2}{4N^2}|\lambda_{1234}+\lambda_{2143}|^2 \times \quad (7)$$
$$\times \Delta(k_1 + k_4 - k_2 - k_3)\,\delta(\varepsilon_1 - \varepsilon_2 - \varepsilon_3 - \varepsilon_4)(n_1+1)\,n_2\,(n_3+1)\,n_4$$

and the magnetization precession relaxation is given by

$$\dot{n}_0 = \sum_{234}|W(n_0, n_2, n_3, n_4 \to n_0+1, n_2-1, n_3-1, n_4-1) -$$
$$- W(n_0, n_2, n_3, n_4 \to n_0-1, n_2+1, n_3-1, n_4+1)| + \quad (9);$$
$$+ \sum_{134}|W(n_1-1, n_0, n_3-1, n_4+1 \to n_1, n_0+1, n_3, n_4) -$$
$$- W(n_1, n_0, n_3, n_4 \to n_1+1, n_0-1, n_3+1, n_4-1)|.$$

Card 4/7

The width of antiferromagnetic ...

$n_{k\neq 0} = \bar{n}_k = 1/(e^{\varepsilon_k/kT} - 1)$. $\varepsilon_{0\delta} = 2Jz$, the primed quantities refer to the spin waves described by the ß operators; n_k and n_k' are the mean numbers of the α- and ß spin waves for states with the momentum $\vec{k}$; ε_k and ε_k' are the energies of magnons with momentum $\vec{k}$. Eq. (9) can be written as $\dot{n}_o = -\lambda(n_o - \bar{n}_o)$ where λ^{-1} is the mean precession relaxation time:

$$\lambda = \frac{\pi}{\hbar}\frac{e_{0\delta}^2}{N^2}\sum_{234}|\lambda_{0234} + \lambda_{2043}|^2\,\Delta(k_0 - k_2 - k_3)\,\delta(\varepsilon_0 - \varepsilon_2 + \varepsilon_3 - \varepsilon_4)\times \quad (10)$$
$$\times (n_2 n_4' + n_3 n_4' + n_3' n_4').$$

or, for $\vec{R}\vec{\Gamma} \ll 1$

$$\lambda = \frac{27}{\hbar(2\pi)^3 e_{0\delta}^4}\int \frac{(\varepsilon_2^2 - \varepsilon_0^2)^{1/2}(\varepsilon_3^2 - \varepsilon_0^2)^{1/2}\cos^2\theta\, d\theta \sin\theta}{\varepsilon_0 \varepsilon_{3+2}} \times \quad (12)$$
$$\times e^{-\varepsilon_0/kT}\delta(\varepsilon_0 - \varepsilon_2 + \varepsilon_3 - \varepsilon_{3+2})\,d\varepsilon_3\,d\varepsilon_2.$$

with $\varepsilon_{3+2} = \varepsilon_{\vec{k}_3+\vec{k}_2}$ and $D^2 \approx 1$. With $\varepsilon_{2+3} < \varepsilon_3$ and $\pi/2 < \theta < \pi$ the authors find

Card 5/7

The width of antiferromagnetic ...

$$\frac{\lambda}{\omega_0} = h_A^2 \frac{e^{-x_0}}{x_0^5}(16x_0^4 + 30x_0^3 + 46x_0^2 + 54x_0 + 37),$$

$x_0 = (\varepsilon_0/kT)$, $h_A = g\beta H_A/zJS = H_A/H_E$. H_E is the intensity of the field of the exchange forces, and $\omega_0 = \varepsilon_0/\hbar$ is the antiferromagnetic resonance frequency. For MnF_2 $\lambda = 160$ G at $T = 6^\circ K$ and $\lambda = 12$ G at $T = 4^\circ K$. This estimation shows that already at such low temperatures the lines are considerably broadened. There are 6 references: 1 Soviet and 5 non-Soviet. The four references to English-language publications read as follows: A. M. Clogston et al. J. Phys. Chem. Solids, 1, 129, 1956; J. Van Kranendonk, J. H. Van Vleck, Rev. Mod. Phys., 30, 1, 1958. T. Holstein, H. Primakoff, Phys. Rev., 58, 1908, 1940. F. M. Johnson, A. N. Nethercot. Phys. Rev. 114, 705, 1959.

ASSOCIATION: Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta (Radiophysics Institute of Gor'kiy State University)

Card 6/7

45624

S/141/62/005/006/008/023
E192/E382

24.7000

AUTHORS: Genkin, V.N. and Fayn, V.M.

TITLE: On the theory of ferro- and antiferromagnetic resonance

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v. 5, no. 6, 1962, 1115 - 1122

TEXT: Experiments on ferromagnetic (or antiferromagnetic) resonance usually determine the average values of the components of the magnetic moment. On the other hand, when theoretically investigating the relaxation processes in these systems, the equilibrium equations are used which are based on the average number of magnones n_0 and n_k. An attempt is made, therefore, to determine theoretically the mean values of the transverse components of the magnetic moment and, for this purpose, the kinetic equations for the density matrix $\rho_{ma;na}$ are employed. The system is dissipative with regard to the subscript 'a' and, in general, nondiagonal with regard to the subscript 'm, n'. The Hamiltonian of such a system, consisting of interacting dynamic

Card 1/ 4

On the theory of ....

and dissipative sub-systems, is in the form:

$$\hat{H} = \hat{hE} + \hat{hF} + \hat{hV} \qquad (1)$$

where $\hat{hE} = \hat{hE}_0 + \hat{hW}(t)$ is the Hamiltonian of the dynamic sub-system which is subjected to the action of an external field $\hat{hW}(t)$, $\hat{hF}$ is the Hamiltonian of the dissipative sub-system and $\hat{hV}$ is the interaction energy. The kinetic equation for the system is in the form:

$$\frac{\partial \hat{\varrho}}{\partial t} + i\left[\hat{E}_o + \hat{W} + \hat{N}, \hat{\varrho}\right] = R(\hat{\varrho}) \qquad (2)$$

where ϱ is the density matrix which is diagonal with respect to the subscripts of the dissipative sub-system and:

$$N_{m\alpha;n\alpha} = -\sum_{k,\alpha'} \frac{V_{m\alpha;k\alpha'} V_{k\alpha';n\alpha}}{E_k - E_n + F_{\alpha'} - F_\alpha} \Delta(\omega_{nm}) \qquad (3)$$

Card 2/4

On the theory of ....

$$R_{m\alpha;n\alpha} = \pi \sum_{k,\ell,\alpha'} \{2V_{m\alpha;k\alpha'} V_{\ell\alpha';n\alpha} \rho_{k\alpha',\ell\alpha'} \delta(E_\ell - E_n + F_{\alpha'} - F_\alpha) \Delta(\omega_{mk} + \omega_{mk}) - V_{m\alpha;k\alpha'} V_{k\alpha';\ell\alpha} \rho_{\ell\alpha;n\alpha} \delta(E_k - E_\ell + F_{\alpha'} - F_\alpha) \Delta(\omega_{m\ell}) - V_{k\alpha;\ell\alpha'} V_{\ell\alpha';n\alpha} \rho_{m\alpha;k\alpha} \delta(E_\ell - E_n + F_{\alpha'} - F_\alpha) \Delta(\omega_{nk})\} \quad (4)$$

where hE_n and hF_α are eigen values of the energy of the dynamic and dissipative sub-system, respectively, and $\omega_{nm} \equiv E_n - E_m$. The above equations are used to investigate a system when the dissipative sub-system is much greater than the dynamic one and where the effect of the dynamic sub-system can be neglected. The equations lead to an expression which gives the mean value of a certain operator which permits calculation of the mean values of the magnetic-moment components. This expression is employed to investigate the case of a ferromagnetic resonance under the assumption that the system is in the form of small single-axis ferro-dielectric crystals. The magnetic field H_o is directed

Card 3/4

On the theory of ....

along the axis of anisotropy z while an alternating magnetic field is polarized in the plane x, y . The antiferromagnetic resonance is also investigated by using the same equation. It is found that in the latter case, unlike in ferromagnetics, the exchange interaction in the presence of anisotropy plays an essential part in the resonance.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: May 18, 1962

Card 4/4

44164

S/181/62/004/012/004/052
B104/B102

94452

AUTHOR: Genkin, V. N.

TITLE: Theory of the relaxation of quantum systems

PERIODICAL: Fizika tverdogo tela, v. 4, no. 12, 1962, 3381-3389

TEXT: In connection with problems of quantum radiophysics the control equation of a quantum system made up of two interacting subsystems, one with discrete spectrum (dynamic part) and one with continuous spectrum (dissipative part), is investigated without assuming the density matrix to be diagonal at all instants of time. The Hamiltonian of the system is $\mathcal{H} = H_0 + \lambda V$ (1), where H_0 is the unperturbed part of the Hamiltonian of the system with the eigenfunctions $|an\rangle$; the Latin letter represents the set of discrete indices, the Greek letter the continuous indices. The relaxation time of the system under the action of the perturbation λV will be of the order of $t = \lambda^{-2}\tilde{t}$. The evolution of this system is described by the unitary operator $U(t) = \exp\left\{-i(H_0 + \lambda V)t\right\}$ ($\hbar = 1$),

Card 1/4

Theory of the relaxation of ...

which can be represented by

$$U(t)=\exp[-iH_0t]-i\lambda\int_0^t dt_1\exp[-iH_0(t-t_1)]\,V\exp[-iH_0t_1]+\dots$$
$$\dots+(-i\lambda)^n\int_0^t dt_n\int_0^{t_n}\dots\int_0^{t_1} dt_1\exp[-iH_0(t-t_n)]\,V\exp\times \quad (7)$$
$$\times[-iH_0(t_n-t_{n-1})]V\dots V\exp[-iH_0t_1]+\dots.$$

The properties of the term

$$U_1(t)=-i\lambda\int_0^t\exp[-iH_0(t-t_1)]\,V\exp[-iH_0t_1]\,dt_1. \quad (8)$$

in (7), which is related to the existence of a diagonal singularity as well as the properties of the diagonal part $U_2^{\mathrm{III}}(t)$ and the nondiagonal part of the term of second order in (7) are studied. With the aid of

$$\pi\sum_{\alpha}\int d\omega''\delta(\omega_{\alpha\alpha}-\omega_{\beta\beta})\delta\omega_{\alpha\beta}\,0W^{\mathrm{III}\alpha\alpha}(\omega''/\omega)=\Gamma^{\alpha\alpha}(\omega) \quad (21)$$

Card 2/4

Theory of the relaxation of ...

the expression

$$\langle a'n|U_2^W(t)|al\rangle = -\lambda^2 t\delta(a-a')e^{-\varepsilon_n(a)t}\Gamma^{nl}(a). \quad (22)$$

is obtained for the matrix element of $U_2(t)$.

$$\langle ma'|U_{2n}^W(t)|la\rangle = \left\langle ma'\left|\frac{(-\lambda^2 t)^n}{n!}\Gamma^n\right|la\right\rangle\delta(a-a'). \quad (27)$$

is obtained for the matrix element of the general term $U_{2n}^W(t)$ which describes the diagonal transitions in the system. Using these results it is possible to arrive at

$$\frac{d\rho^{ml}(al)}{dt} = -i\langle ma|[H_0\rho(t)]|la\rangle + \\ + \pi\lambda^2\sum_{as}\int da' W^{mlss}(a|a')[\delta(\omega_{ma;sa'}) + \delta(\omega_{aa';la})]\delta_{\omega_{ml}+\omega_{sl},0}\rho^{ss}(a'l) - \\ - \pi\lambda^2\sum_{sk}\int da' W^{klmm}(a'|a)\delta(\omega_{mk;la'})\delta_{\omega_{ml},0}\rho^{kl}(al) - \quad (44) \\ - \pi\lambda^2\sum_{sk}\int da' W^{mlsl}(a'|a)\delta(\omega_{sa';la})\delta_{\omega_{kl},0}\rho^{ma}(al).$$

Card 3/4

Theory of the relaxation of ...

for the density matrix, which represents a generalization of the equation by L. Van Hove (Physica,21,517,1955; 23,441,1957). In these equations, ω_{qu} is the energy difference of the dynamic part of the system between the states q and u.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet (Gor'kiy State University)

SUBMITTED: June 18, 1962

Card 4/4

GENKIN, V.M.; KHANIN, Ya.I.

Lasers; survey. Izv. vys. ucheb. zav; radiofiz. 5 no.3:423-458 '62. (MIRA 15:7)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

(Masers)

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S/141/62/005/006/008/023
E192/E382

24.7000

AUTHORS: Genkin, V.N. and Fayn, V.M.

TITLE: On the theory of ferro- and antiferromagnetic resonance

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Card 1/ 4

On the theory of ....

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$$\frac{\partial \hat{\varrho}}{\partial t} + i\left[\hat{E}_o + \hat{W} + \hat{N}, \hat{\varrho}\right] = R(\hat{\varrho}) \qquad (2)$$

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$$N_{m\alpha;n\alpha} = -\sum_{k,\alpha'} \frac{V_{m\alpha;k\alpha'} V_{k\alpha';n\alpha}}{E_k - E_n + F_{\alpha'} - F_\alpha} \Delta(\omega_{nm}) \qquad (3)$$

Card 2/4

On the theory of ....

$$R_{m\alpha;n\alpha} = \pi \sum_{k,\ell,\alpha'} \{2V_{m\alpha;k\alpha'} V_{\ell\alpha';n\alpha} \rho_{k\alpha',\ell\alpha'} \delta(E_\ell - E_n + F_{\alpha'} - F_\alpha) \Delta(\omega_{mk} + \omega_{mk}) - V_{m\alpha;k\alpha'} V_{k\alpha';\ell\alpha} \rho_{\ell\alpha;n\alpha} \delta(E_k - E_\ell + F_{\alpha'} - F_\alpha) \Delta(\omega_{m\ell}) - V_{k\alpha;\ell\alpha'} V_{\ell\alpha';n\alpha} \rho_{m\alpha;k\alpha} \delta(E_\ell - E_n + F_{\alpha'} - F_\alpha) \Delta(\omega_{nk})\} \quad (4)$$

where hE_n and hF_α are eigen values of the energy of the dynamic and dissipative sub-system, respectively, and $\omega_{nm} = E_n - E_m$. The above equations are used to investigate a system when the dissipative sub-system is much greater than the dynamic one and where the effect of the dynamic sub-system can be neglected. The equations lead to an expression which gives the mean value of a certain operator which permits calculation of the mean values of the magnetic-moment components. This expression is employed to investigate the case of a ferromagnetic resonance under the assumption that the system is in the form of small single-axis ferro-dielectric crystals. The magnetic field H_o is directed

Card 3/4

along the axis of anisotropy z while an alternating magnetic field is polarized in the plane x, y . The antiferromagnetic resonance is also investigated by using the same equation. It is found that in the latter case, unlike in ferromagnetics, the exchange interaction in the presence of anisotropy plays an essential part in the resonance.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: May 18, 1962

ACCESSION NO: AP4013490 S/0181/64/006/002/0368/0379

AUTHOR: Genkin, V. N.

TITLE: The theory of cross relaxation

SOURCE: Fizika tverdogo tela, v. 6, no. 2, 1964, 368-379

TOPIC TAGS: cross relaxation, Zeeman effect, spin reorientation, simultaneous reorientation, quantum mechanics, cross relaxation time

ABSTRACT: On the basis of quantum mechanics the author has derived equations for the diagonal elements in the density matrix of the Zeeman part of a system (for superposition of the Zeeman sublevel), and he has shown to what extent the computation of cross-relaxation time may be made by the method of moments. Detailed examination was made of the simultaneous reorientation of two and three spins, starting with an examination of the behavior of a system consisting of two weakly interacting parts: a dynamic part, the spectrum of the intrinsic values of E_n, the Hamiltonian of which is discrete; and a dissipative part with a Hamiltonian possessing a continuous spectrum of the values of E_b. He concludes that his treatment can be easily adapted for describing the cross relaxation in a system of particles of a single sort with spins of 1 (but with nonequidistant levels) by

Card 1/2

ACCESSION NO: AP4013490

introducing operators and projecting the system to the desired energy state. The calculations may naturally be generalized in the case of more complex cross-relaxation processes with simultaneous reorientation of four spins and more. "In conclusion, I consider it my pleasant duty to thank V. M. Fayn for his constant interest, his aid in the work, and his examination of the manuscript." Orig. art. has: 61 formulas.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut, Gor'kiy
(Scientific Research Institute of Radiophysics)

SUBMITTED: 08Jul63 DATE ACQ: 03Mar64 ENCL: 00

SUB CODE: PH NO REF SOV: 007 OTHER: 013

Card 2/2

S/0181/64/006/005/1320/1324

ACCESSION NR: AP4034908

AUTHORS: Genkin, V. N.; Fayn, V. M.

TITLE: Behavior of spin systems in a strong variable field

SOURCE: Fizika tverdogo tela, v. 6, no. 5, 1964, 1320-1324

TOPIC TAGS: spin, spin relaxation, nuclear magnetic resonance, magnetic field

ABSTRACT: The behavior of a spin system (spin $\frac{1}{2}$) is considered in a constant magnetic field $H_z = H_0$ and a variable field $H_x = \frac{|w_1|}{\gamma}\cos\omega t$; $H_y = -\frac{w}{\gamma}\sin\omega t$, where γ is the gyromagnetic ratio. The processes of spin-lattice relaxation are taken into account but the spin-spin interaction is neglected. This problem was considered by Bloch and others (F. Bloch. Phys. Rev., 105, 1206, 1957; R. Hubbord. Rev. Mod. Phys., 33, 249, 1961; K. Tomita. Progr. Theoret. Phys., 19, 541, 1958) but their results appear to be incorrect. The equations for the average value $\langle I^{m_2}_{m_1}\rangle = \langle I^{m_2}_{m_1}\rangle_\omega$ in a coordinate system rotating with frequency ω, where $I^{\pm 1} = (I_x \pm iI_y)/\sqrt{2}$, $I^0 = I_z$, are found to be $\frac{d}{dt}\begin{pmatrix}\langle I^{m-1}\rangle \\ \langle I^{m}\rangle \\ \langle I^{m+1}\rangle\end{pmatrix} = \ldots$

Card 1/3

ACCESSION NR: AP4034908

$$\left[\begin{pmatrix} -i\Delta_0 + A_{-1-1} & i\omega_1 + A_{-10} & A_{-11} \\ \frac{i\omega_1}{2} + A_{0-1} & A_{00} & -\frac{i\omega_1}{2} + A_{01} \\ A_{1-1} & -i\omega_1 + A_{10} & i\Delta_0 + A_{11} \end{pmatrix}\right]\begin{pmatrix} \langle f^{0-1}\rangle \\ \langle f^{00}\rangle \\ \langle f^{01}\rangle \end{pmatrix} = \begin{pmatrix} A_{-1} \\ A_0 \\ A_1 \end{pmatrix}, \quad \text{where } \Delta_0 = \omega_0 - \omega \text{ and } \omega_0 = \gamma H_0.$$

Here $A_{\mu\mu'} = A_{-\mu-\mu'}$, $A_\mu = A_{-\mu}$ are of the form

$$A_{-1-1} = \sum_{\lambda\lambda'} B_{\lambda\lambda'}(q^\lambda_{-1}q^{\lambda'}_1 + q^\lambda_1 q^{\lambda'}_{-1} + q^\lambda_0 q^{\lambda'}_0),$$

$$A_{-10} = -\sum_{\lambda\lambda'} B_{\lambda\lambda'}(q^\lambda_1 q^{\lambda'}_0 + q^\lambda_0 q^{\lambda'}_1),$$

$$A_{-11} = -2\sum_{\lambda\lambda'} B_{\lambda\lambda'} q^\lambda_1 q^{\lambda'}_1,$$

$$A_{01} = \frac{1}{2}\sum_{\lambda\lambda'} B_{\lambda\lambda'}(q^\lambda_0 q^{\lambda'}_1 + q^{\lambda'}_0 q^\lambda_1),$$

$$A_{00} = 2\sum_{\lambda\lambda'} B_{\lambda\lambda'}(q^\lambda_1 q^{\lambda'}_{-1} + q^\lambda_{-1} q^{\lambda'}_1,$$

$$A_1 = \sum_{\lambda\lambda'} B_{\lambda\lambda'}(q^\lambda_1 q^{\lambda'}_0 - q^\lambda_0 q^{\lambda'}_1),$$

$$A_0 = \sum_{\lambda\lambda'} B_{\lambda\lambda'}(q^\lambda_{-1} q^{\lambda'}_1 - q^\lambda_1 q^{\lambda'}_{-1}),$$

Card 2/3

ACCESSION NR: AP4034908

and $B_{\lambda\lambda'} = \sum_{\mu} \Phi^{\mu-\mu}(\omega_{\lambda'-\mu}) \Delta(\omega'_{\lambda+\lambda'}) p_{\lambda'}^{\mu} p_{\lambda}^{\mu}$, where $\omega' = \sqrt{\omega_1^2 + \Delta_\omega^2}$. This result differs from that obtained by Bloch by the factor $\Delta[\omega(\lambda - \lambda')]$. However for weak fields this factor tends to unity, which coincides with the equation given by Bloch. The stationary solutions are given by a complicated expression which can also be given in the form $\langle I_y^\circ \rangle = 0$; $\cos\theta \langle I_x^\circ \rangle = \sin\theta \langle I_z^\circ \rangle$, where $\sin\theta = \frac{\omega_1}{\omega'}$; $\cos\theta = \frac{\Delta_0}{\omega'}$. Orig. art. has: 51 equations.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut Gor'kiy (Scientific Research Institute of Radiophysics)

SUBMITTED: 28Oct63 DATE ACQ: 20May64 ENCL: 00

SUB CODE: SS, GP NO REF SOV: 004 OTHER: 004

Card 3/3

FAYN, Veniamin [illegible]; [illegible], Yakov [illegible]. [illegible] uchastiye: GEKKIN, V.N.; YASHCHIN, E.[illegible]; [illegible], [illegible]; ROZENBERG, Ye.L.; IVANENKO, [illegible], red.

[Quantum radio physics] Kvantovaia radiofizika. Moskva, Sovetskoe radio, 1965. 607 p. ([illegible])

L 15937-66 EWT(d)/FBD/EWT(1)/EWT(m)/ESC(k)-2/EWP(t)/ETI/EWP(b)-2/EWA(h)/EWA(l)/EWP(v)-2

ACC NR: AP6004414 SOURCE CODE: UR/0051/66/020/001/0133/0137

AUTHOR: Aleksandrov, A. P.; Genkin, V. N.; Kheyfets, M. I.

ORG: none

TITLE: Measurement of the population of the metastable level of the working medium of a laser 25,44

SOURCE: Optika i spektroskopiya, v. 20, no. 1, 1966, 133-137

TOPIC TAGS: laser optic material, laser theory, luminescence, laser pump

ABSTRACT: The authors discuss an experimental method for determining the relative number of excited molecules in a medium, based on the use of luminescence saturation. This research was motivated by the fact that knowledge of the maximum attainable population of the metastable level is one of the main criteria in the choice of a laser medium. The luminescence saturation curves of ruby were investigated. The luminescence was produced by a xenon flash-lamp pump. The luminescence intensity was plotted against the energy dissipated in the lamp supply circuit. The pump energy was assumed to be a linear function of luminescence, so that the relationship between the pump energy and the energy supplied to the laser could be readily determined. Luminescence was excited in a laser consisting of an elliptical reflector, with the ruby and the xenon pump lamp located in its foci. The measurement was made in two stages. In the first the luminescence was plotted as a function of the voltage in the linear mode (with the diaphragm), and in the second the same plot was obtained in the saturation mode (without the diaphragm). The results show that the

Card 1/2

L 15937-65

ACC NR: AP6004414

pump energy was not proportional to the electric energy at high and at low voltages. The tests were made with two ruby samples. One of the samples gave results which agreed with theory. The results from the other sample were not in agreement with theory. The disagreement in the second case is attributed to the fact that only part of the ruby volume participated in the laser action. It is emphasized in conclusion that such experiments yield only the metastable-level population averaged over the volume, which is sufficient information for the investigation of new laser media. Orig. art. has: 4 figures and 6 formulas. [02]

SUB CODE: 20/ SUBM DATE: 13Apr64/ ORIG REF: 002/ OTH REF: 004/ ATD PRESS: 4202

Card 2/2

ACC NR: AP6034211 SOURCE CODE: UR/0368/66/005/004/0437/0441

AUTHORS: Genkin, V. N.; Mel'nikov, V. V.

ORG: none

TITLE: The possibility of large power dissipation in pulsed xenon lamps

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 4, 1966, 437-441

TOPIC TAGS: xenon lamp, shock wave, UV light source, recombination emission

ABSTRACT: The possibility of using pulsed xenon lamps as light sources in the near UV part of the spectrum was investigated. Such radiation does not normally exceed 3--7% of the electrical energy dissipated in such lamps. Increased voltage is necessary to produce measurable quantities, but this increases the intensity of the shock wave that forms in the tube at the moment of discharge, and the lamp tube is thus in danger of breaking. A successful test was made of a supply circuit with inductive resistance used to eliminate the shock wave in the lamp. Examination of the resulting spectral distribution of emission showed a background associated chiefly with recombination of ions and electrons, with retarded radiation of the electrons. The emission spectra were studied in the range from 3000 to 9000 Å for various parameters of the supply circuit. The amount of capacitance has no effect on the distribution. Increase in voltage increases the UV part of the spectrum, and increase in inductance has the reverse effect. It is thus seen that the energy distribution for xenon-lamp

 UDC: 621.385.8

ACC NR: AP6034211

emission is not black-body distribution, due to the substantial contribution of ion and atom lines at the discharge energies obtainable in the lamp tube. The authors thank R. P. Vasil'yev for supplying lamps for the experiment. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 03Mar65/ ORIG REF: 010/ OTH REF: 001

Card 2/2

GENKIN, V.R.

Foot switch and an electric suction device. Med. prom. 13 no.8: 41-42 Ag '59. (MIRA 13:8)

1. Novo-Vodolazhskaya rayonnaya bol'nitsa Khar'kovskoy oblasti.
(MEDICAL INSTRUMENTS AND APPARATUS)

GLAZKOV, P.G., inzh.; SLADKOSHTEYEV, V.T., kand.tekhn.nauk; TELESOV, S.A., inzh.; OFENGENDEN, A.M., inzh.; STRELETS, V.M., kand.tekhn.nauk; MURZOV, K.P., inzh.; Prinimali uchastiye: MALAKHA, A.V.; DRUZHININ, I.I.; YELISOF, A.V.; YEVTUSHENKO, V.B.; OSIPOV, V.G.; BABASHIN, Yu.Z.; SLIN'KO, A.N.; ZELENOV, S.N.; GENKIN, V.Ya.; PITAK, N.V.; VYSOTSKAYA, T.M.

Investigating the operation of multiple-pit continuous steel casting arrangements. Trudy Ukr. nauch.-issl. inst. met. no.7:133-142 '61. (MIRA 14:11)

(Continuous casting--Equipment and supplies)

GENKIN, V. YA.

S/133/62/000/005/004/008
A054/A127

AUTHORS: Itskovich, G.M., Engineer, Zubarev, A.G., Engineer, Gankin, V.B., Engineer, Petrichenko, D.P., Engineer, and Genkin, V.Ya., Engineer

TITLE: The smelting of rimming steel in 80-ton electric furnaces with continuous pouring

PERIODICAL: Stal', no. 5, 1962, 420 - 425

TEXT: The industrial-scale electric smelting of rimming steel is carried out in furnaces with a rated capacity of 80 tons and an actual capacity of 90 - 95 tons, (transformer capacity: 25,000 kW, electrode-diameter: 555 mm, depth of the bath: 1000 mm). Tests have shown that one of the most important conditions of this process is the oxidation of the metal before tapping which determines its uniform rimming in the ingot mold. The oxygen quantity involved in the process depends mainly on the carbon content of the metal and the ferric oxide content of the slag. This, in turn, is conditioned by the quantity of ore added to the charge and the basicity of the slag. For slags with a basicity of 3.0 - 5.0 and at metal temperatures of 1635 - 1645°C, the average value of FeO_{total} was 24.1%; [Abstracter's note: subscript total is the translation of the Russian subscript

Card 1/5

The smelting of.....

общий - (obshchiy)], at temperatures above 1660°C: 18.2%. To obtain the required oxidation during rimming of the metal three methods were used: a) adding ore, b) with oxygen and ore, c) with oxygen alone. Generally method b) is applied, ensuring quick heating of the bath, a higher oxidation rate of carbon (0.25 - 1.0% C per hour) and a ferric oxide content of the slag of 20.3%. The optimum metal temperature at the beginning of oxygen blowing was found by tests to be 1,570 - 1,580°C. The optimum degree of metal oxidation ensuring a uniform rimming in the mold, can be obtained when the slag contains 15 - 23% FeO_{total} before reduction. Oxidation and rimming can be promoted by adding 50 - 200 g/ton aluminum in the ladle, depending on the carbon content and oxidation of the slag. Desulfuration of the metal takes place most intensively (before slag tapping) at a slag basicity of 2.5 - 3.0. In this case it will be 0.011% of the smelt (average value). When electro-smelting of rimming steel is combined with continuous pouring, the charge must be composed so that the carbon content of the smelting metal is 0.10 - 0.20% higher than prescribed for the given grade. The charge usually consists of 80 tons iron-steel scrap, 5 tons scrap and waste from the converting shops and 5 tons pig iron; the first batch (55 - 65% of the charge) is molten in 1 - 1.5 hours, then 1.5 - 2.5% ore is added to obtain a 13 - 20% FeO_{total} content of the slag, then lime or limestone (4 - 5% or 7 - 8% respective-

The smelting of.....

ly) is added to get a slag basicity of 2.5 - 3.0. Pig iron stabilizes the carbon content during smelting and improves desulfuration at the beginning of firming. Oxygen (98.5 - 99.2% pure) is blown through the bath twice, for 8 - 15 minutes, at a pressure of 10 - 13 atm. The average oxygen consumption per smelt is 3 - 8 m^3/ton. The temperature upon the first oxygen blowing should be over 1560°C, before the second blowing over 1580°C, to prevent over-oxidation of the metal. The composition of steel grades produced by the method is: (in %)

	C	Mn	S	P
Ст.3кп (St.3kp)	0.17	0.40	0.040	0.022
Ст.2кп (St.2kp)	0.11	0.40	0.034	0.012
Ст.1кп (St.1kp)	0.09	0.35	0.035	0.011

Continuous pouring is carried out with double-channel, vertical type equipment, for casting 150 x 620, 150 x 780 and 170 x 1040 mm ingots. Close attention was paid to the ladle-spout lining. The best results were obtained by using for the ladle and intermittent ladle casings with a high aluminum oxide content, which last longer and ensure a controlled flow of a quantity of 90 tons of molten steel. The pouring rates are: for 150 x 620 mm ingots 0.8 - 0.9 m/min, for 150 x 780 mm ingots 0.7 - 0.8 m/min and for 170 x 1040 mm ingots 0.5 - 0.6 m/min. Pouring 90 tons of metal through two channels requires 65 - 70 minutes. The rate of

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pouring is limited by the shortness of the secondary cooling sector (6.5m), where the metal solidifies. The rimming of the steel in the mold, in case of medium--carbon grades, can be promoted by adding aluminum, in the case of medium-carbon grades by blowing oxygen into the metal stream after the intermittent ladle. The macrostructure of continuously poured, electro-smelted steels was studied with 10 templates taken from 67 heats. Due to the low iron content and inadequate addition of aluminum in the ladle, the metal with a carbon content above 0.13% rims weakly in the mold and much too thin a skin forms. In this case, blowing oxygen will intensify rimming and a normal skin, 10 - 25 mm thick, will be obtained. Other defects often encountered in this kind of ingots are blisters in the skin, 0.5 - 3.0 mm in diameter, at a depth of 1 - 5 mm below the surface, and also beads and lateral and longitudinal cracks. Lateral cracks can be prevented by closely controlling the metal oxidation and improving the mold-coating. Longitudinal cracks are less frequent, mainly owing to the delayed shrinkage of the thinned sectors of the solidifying skin in the mold. Rimming steel ingots are hot-rolled on the 1200-mm mill, with universal roughing, two-high stand and reversing-finishing four-high stand, with coils heated in the furnace. To promote the sintering of gas-blisters, the reductions are increased (170 x 1040 mm slabs are reduced with 9 passes instead of 11, 150 x 620 mm slabs with 5 passes instead of 7).

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The smelting of .....

The slab-heating temperature was raised from 1260 - 1270 to 1280 - 1310°C. Sheets, 13 - 14 mm and 2 - 3 mm thick are rolled from these slabs. At the "Zaporozhstal'" Plant the rate of consumption of the metal charge was 1.262 ton/ton of flawless product in 1960; for the new process this parameter was 1.127 - 1.135 ton/ton of flawless product. Smelting time was reduced to 4 ½ hours; the electric power required is 500 - 550 kW-h/ton of flawless steel. The application of minimum 80-ton capacity electric furnaces and continuous pouring is advisable where cheap open-hearth scrap and electric power are available. This increases production by 8 - 12% with a minimum capital outlay. There are 3 figures. The reference to the English-language publication reads as follows: Reinartz, L., Barnes, H., Iron and Steel Engineer, no. 1, 1954.

Card 5/5

YEVLANOVA, A.V.; STEFANOVICH, S.N.; LENCHEVSKIY, O.S.; GENKIN, V.Ye.

Electrolytic purification of spent pickling solutions and regeneration of valuable products. Vod. i san. tekh. no.5:15-19 My '59.
(MIRA 12:7)

(Metals--Pickling) (Sewage--Purification)
(Electrolysis)

5.1310

77646
SOV/80-33-2-21/52

AUTHORS: Lur'ye, Yu. Yu., Genkin, V. Ye.

TITLE: Electrochemical Purification of Waste Water Containing Cyanides

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 2, pp 384-389 (USSR)

ABSTRACT: For purification studies, alkaline KCN solutions containing from 15 to 230 mg/l of CN^- ions and waste water from the metal plating department of the Moscow Likhachev Automobile Plant were used. Electrolysis was performed at room temperature, using stainless steel cathodes and platinum, graphite, stainless steel, magnetite, and nickel anodes. The cyandides are oxidized on the anode, mainly by the reaction:

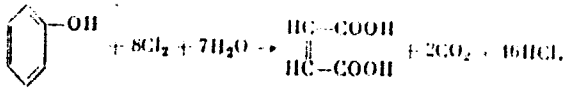
$$CN^- + 2OH^- - 2e \rightarrow CNO^- + H_2O;$$

Card 1/4

and the CNO^- ions are further hydrolysed. All anodes were found effective, but graphite and magnetite are best because of their resistance to corrosion. Use of lower current densities (0.1-0.5 amp/dm^2) increases yield based on current to 30-40% compared with 2-4% at 1-6 amp/dm^2, and lower consumption of electricity to 0.02 kw-hr/1 g CN^-. Decrease in CN^- concentration slows down anodic oxidation of cyanides. Addition of NaCl causes increase of yield based on current up to 60-80%, reduces power consumption to 0.007-0.01 kw-hr/1 g CN^-, and speeds up the process. In the presence of Cl^-, the CN^- ions are oxidized by the liberated chlorine:

$$2Cl^- - 2e \rightarrow Cl_2,$$
$$CN^- + Cl_2 + 2OH^- \rightarrow CNO^- + 2Cl^- + H_2O,$$
$$2CNO^- + 3Cl_2 + 4OH^- \rightarrow 2CO_2 + N_2 + 6Cl^- + 2H_2O.$$

Electrolytic oxidation is most effective at a Cl^-/CN^- ratio of from 3 to 5. Complex cyanides, e.g., $[Cu(CN)_3]^=$, and thiocyanate ions also undergo anodic oxidation with formation of nontoxic CNO^- ions and cupric and sulfate ions, respectively. Small quantities (in the order of several mg per liter) of phenol and cresol contained in the waste water can also be oxidized at the anode by the equation:



$$C_6H_5OH + 8Cl_2 + 7H_2O \rightarrow \begin{matrix} HC{-}COOH \\ \| \\ HC{-}COOH \end{matrix} + 2CO_2 + 16HCl.$$

As compared with the chemical method of purification (reaction with the chloride of lime), electrochemical oxidation is more advantageous in that it requires relatively simple apparatus, does not leave precipitates, and its cost (i.e., cost of electric power) is less than the cost of bleaching powder (cost of electrical power

Card 3/4

LUR'YE, Yu.Yu., doktor khimicheskikh nauk; YEVLANOVA, A.V.., kand.khimicheskikh nauk; GENKIN, V. Ye.; STEFANOVICH, S.N.

Purfication of waste waters from factories manufacturing flavoring essences. Zhur. VKHO 6 no.2:181-197 '61. (MIRA 14:3)
(Sewage disposal) (Flavoring essences)

LUR'YE, Yu.Yu.; GENKIN, V.Ye.

Electrochemical purification of plating plant waste water. Ochis. stoch. vod. no.3:50-63 '62. (MIRA 16:5)
(Electrolysis) (Industrial wastes--Purification)

GENKIN, V.Ye.; BLUVSHTEYN, S.Z.; MOKINA, A.A.

Purification of waste waters at the "Ukrtsink" plant. TSvet. met. 35 no.12:29-35 D '62. (MIRA 16:2)
(Ukraine--Zinc industry) (Water--Purification)

GENKIN, Ya.S., inzh.

Device for controlling spot welding conditions. Svar.proizv. no.11:42 N '64. (MIRA 18:1)

1. Gomel'skiy zavod sel'skokhozyaystvennogo mashinostroyeniya.

Ceren, Yu Yu

PHASE I BOOK EXPLOITATION SOV/4347

Akademiya nauk Ukrainskoy SSR. Institut metallokeramiki i spetsial'nykh splavov. Seminar po zharostoykim materialam

Trudy, vyp. no. 5 (Transactions of the Academy of Sciences, Ukrainian SSR, Institute of Metal Ceramics and Special Alloys, Seminar on Heat Resistant Materials, No. 5) Kiyev, Izd-vo AN Ukrainskoy SSR, 1960. 63 p. 2,000 copies printed.

Ed. of Publishing House: I.V. Kisina; Tech. Ed.: A.A. Matveychuk; Editorial Board: G.V. Samsonov (Resp. Ed.), I.N. Frantsevich, V.V. Grigor'yeva, A.Z. Men'shikov, and M.I. Korsunskiy.

PURPOSE: The book is intended for engineers, scientific workers and students specializing in refractory metals and their compounds, powder metallurgy, electronics, machine building and physical metallurgy in schools of higher technical education.

COVERAGE: This collection of papers, originally presented at the Seminar on Heat Resistant Materials in Kiyev on June 13-June 17, 1958,

Card 1/4